EXHIBIT 7-8 ASSISTIVE TECHNOLOGY (AT) INSTRUCTIONAL SOLUTIONS[1]	
AREA OF INSTRUCTION	**AT OPTIONS**
Organization	Use graphic organizers to visually assist students in developing and structuring ideas and organize their thoughts or work using flow charting, task analysis, webbing or networking ideas, and outlining.
	Use the outline feature of word processing software, which lets students set out major ideas or topics and then add subcategories of information.
Note Taking	Teacher provides copies of structured outlines for students to use in filling in information.
	Use laptop or notebook computers for note taking.
	Optical character recognition software that transforms typewritten material into computer-readable text using a scanner is helpful for students with sever reading disorders.
	Use micro cassette recorders to record notes.
	A teacher's typewritten notes can be duplicated using either carbonless copies or a copy machine.
	Notes can be read by a voice synthesizer allowing students with reading difficulty to review the notes much the same as reviewing a tape recording.
	Videotaping class sessions may be helpful for visual learners who pick up on images or body language.
Writing Assistance	Portable keyboard such as the AlphaSmart can be used to take notes. Text can be downloaded to a word processing program for formatting and editing.
	Word processing may be the most important application of assistive technology for students with mild disabilities. Computers and word processing software enable students to put ideas on paper without the barriers imposed by paper and pencil. Grammar/spellcheckers, dictionaries, and thesaurus programs assist in the mechanics of writing.
	Macros, a feature that allows keystrokes to be recorded in a file that can be used over and over, also assist in mechanics. Macros can be used for spelling difficult text, for repetitive strings of words, or for formatting paragraphs and pages. Macros also save time for students who have difficulty with either the cognitive or motor (keyboarding) requirements of writing.

[1] Behrmann, Michael M, Ed.D., Associate Professor of Education at George Mason University, Fairfax, Virginia, "Assistive Technology for Students with Mild Disabilities," ERIC EC Digest #E529, Eric Clearinghouse on Disabilities and Gifted Education; http://www.kidsource.com/kidsource/content2/assistive_technology.html.

EXHIBIT 7-8 ASSISTIVE TECHNOLOGY (AT) INSTRUCTIONAL SOLUTIONS[1]	
AREA OF INSTRUCTION	**AT OPTIONS**
Writing Assistance (continued)	Word prediction is assistive software that functions similarly to macros. If a student has difficulty with word recall or spelling and cannot easily use the dictionary or thesaurus feature, then word prediction software offers several choices of words that can be selected when word prediction lists pop up. As a student uses this feature more and more, the word prediction lists become more useful to the user.
	Computer editing reduces or eliminates problems such as multiple erasures, torn papers, poor handwriting, and the need to constantly rewrite text that needs only minor modifications. The final copy is neat and legible.
	Motivation is often increased through the desktop-publishing and multimedia capabilities of newer computers. A variety of fonts and styles are available, allowing students to customize their writing and highlight important features.
	Graphic images, drawings, and even video and audio can be added to the project to provide interest or highlight ideas. Multimedia often gives the student the means and the motivation to generate new and more complex ideas.
Productivity	Assistive productivity tools can be hardware-based, software-based, or both. Calculators, for example, can be the credit-card type or software based which can be popped up and used during word processing.
	Spreadsheets, databases, and graphics software also offer productivity tools, enabling students to work on math or other subjects that may require calculating, categorizing, grouping, and predicting events.
	Productivity tools also can be found in small, portable devices called personal digital assistants (PDAs). Newer PDAs can be used as notetaking devices through a small keyboard or graphics-based pen input. Some PDAs can translate words printed with the pen input device to computer-readable text, which can then be edited with the word processor and transmitted to a PC.

EXHIBIT 7-8 ASSISTIVE TECHNOLOGY (AT) INSTRUCTIONAL SOLUTIONS	
AREA OF INSTRUCTION	**AT OPTIONS**
Access to Reference Materials	Many students with mild disabilities have difficulty gathering and synthesizing information for their academic work. In this arena, telecommunications and multimedia are providing new learning tools for the students. A computer and a modem can transport students beyond their physical environment to access electronic information. This is particularly appropriate for individuals who are easily distracted when going to new and busy environments such as the library.
	Telecommunications networks offer access to the information superhighway. Students can establish "CompuPals" with other students, which often motivates them to generate more text and thus gain more experience in writing. Students can also access electronic encyclopedias, library references, and online publications. However, these experiences should be structured, because the information highway is complex and it is easy to get distracted or lost as opportunities are explored.
	Multimedia-based tools are another way in which information can be made accessible to students. Multimedia's use of text, speech, graphics, pictures, audio, and video in reference-based software is especially effective in meeting the heterogeneous learning needs of students with mild disabilities.
Cognitive Assistance	A vast array of application program software is available for instructing students through tutorials, drill and practice, problem-solving, and simulations. Many of the assistive technologies described previously can be combined with instructional programs to develop and improve cognitive and problem-solving skills. Multimedia CD-ROM-based application programs offer another tool for assisted reading. Similar to talking word processors, CD-based books include high-interest stories that use the power of multimedia to motivate students to read. These books read each page of the story, highlighting the words as they are read. Additional clicks of the mouse result in pronunciation of syllables and a definition of the word. When the student clicks on a picture, a label appears. A verbal pronunciation of the label is offered when the student clicks the mouse again. These books are available in both English and Spanish, so students can read in their native language while being exposed to a second language.

EXHIBIT 7-8 ASSISTIVE TECHNOLOGY (AT) INSTRUCTIONAL SOLUTIONS	
AREA OF INSTRUCTION	**AT OPTIONS**
Materials Modification	Special educators are familiar with the need to create instructional materials or customize materials to meet the varied needs of students with disabilities. Today there are powerful multimedia authoring and presentation tools that educators can use to develop and modify computer-based instructional materials for students with mild disabilities, providing a learning tool that these students can access and use to balance their weak areas of learning with their strong areas. Authoring software allows teachers and students to develop instructional software that can incorporate video, pictures, animation, and text into hypermedia-based instruction. Multimedia authoring software is very easy to learn and use. In fact, authoring software packages are even available for young children. For example, if the objective is to teach map reading, an image of a local map can be scanned in and specific locations can be made into buttons that the students can click on, causing a short video clip playing of the familiar location. A set of questions might be asked using both text and synthesized speech to have students give directions on how to get the location shown on the video. Students could then write directions (or draw their own map). Digitized pictures of landmarks could also be incorporated into the directions. These directions, along with the images, could then be printed for use in completing the assignment. Without the ability to author and incorporate multimedia easily into instructional software, such computer-based training would be impossible because of the need to incorporate the shared learning concepts inherent in local environments into the assisted-learning process. Such instruction can make learning more efficient and certainly more real for students for whom abstract learning and generalization may be difficult.